

BEST AVAILABLE COPYApplication No. 10/820,367
Response to Office Action

Customer No. 01933

R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

THE CLAIMS

Claims 1-9 have been canceled, and claims 10-18 have been added to more clearly and positively recite the features of the present invention in better U.S. form.

No new matter has been added, and it is respectfully requested that new claims be approved and entered.

It is respectfully submitted, moreover, that the new claims are in full compliance with the requirements of 35 USC 112, second paragraph, and it is respectfully requested that the rejection thereunder be withdrawn.

THE PRIOR ART REJECTION

Claims 1-9 were rejected under 35 USC 102 or under 35 USC 103 as being anticipated by or obvious in view of USP 5,963,314 ("Worster et al"). This rejection, however, is respectfully traversed.

As recognized by the Examiner, Worster et al discloses analyzing the surface of a semiconductor wafer via a confocal laser scanning microscope. According to Worster et al, a laser is scanned across the surface of a semiconductor wafer, and the

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light intensity is measured at each point in the raster scan to create an XY map of the light intensity in the focal plane of the objective lens of the microscope. In order to create a three-dimensional image of the surface of the wafer, according to Worster et al the raster scan with the laser is repeated at multiple sample heights (multiple focal planes) to create multiple XY light intensity maps. Thus, according to Worster et al the three dimensional image is created based on the multiple XY light intensity maps. See column 8, line 53 to column 9, line 52 of Worster et al.

By contrast, according to the present invention as recited in amended independent claims 10 and 18, the surface of the wafer is scanned using a confocal chromatic height measurement system, perpendicular to the table, for measuring a range to a point on a surface of the wafer so as to enable to recognition of changes in surface height of the wafer while the wafer moves with the table.

With this structure, as shown in Fig. 1 of the present application, and as described in the specification at page 10, lines 6-20, white light is irradiated from a light source 11 and each color in the light is focused on a different point (13a, 13b, 13c) by the lens 12. Only light of one color is reflected from the surface of the wafer, based on the height of the surface of the wafer at the point. The light from the sample is analyzed by a spectrometer to determine its wavelength, and the height of

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the wafer at the point is determined based on the wavelength of the light from the sample. Thus, with the structure of the present invention as recited in independent claims 10 and 18, it is unnecessary to perform the multiple raster scans required by Worster et al to determine the height of the surface of the wafer at a point.

It is respectfully submitted, therefore, that the confocal laser scanning microscope of Worster et al does not at all correspond to the confocal chromatic height measurement system of the present invention as recited in independent claims 10 and 18. And it is respectfully submitted that Worster et al does not at all disclose, teach or suggest determining the height of bumps on a semiconductor wafer using a confocal chromatic height measurement system, as according to the claimed present invention.

Accordingly, it is respectfully submitted that new independent claims 10 and 18, and claims 11-17 depending from new claim 10, all clearly patentably distinguish over Worster et al, under 35 USC 102 as well as under 35 USC 103.

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In view of the foregoing, entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

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If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,

Douglas Holtz
Reg. No. 33,902

Frishauf, Holtz, Goodman & Chick, P.C.
767 Third Avenue - 25th Floor
New York, New York 10017-2023
Tel. No. (212) 319-4900
Fax No. (212) 319-5101

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